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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,580	08/17/2001	Scott Ashkenasz	KT-1040A	3952
35617	7590	09/09/2005	EXAMINER	
DAFFER MCDANEIL LLP P.O. BOX 684908 AUSTIN, TX 78768			GARLAND, STEVEN R	
			ART UNIT	PAPER NUMBER
			2125	
DATE MAILED: 09/09/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/932,580

Applicant(s)

ASHKENASZ ET AL.

Examiner

Steven R. Garland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-13 are pending.
2. If applicant desires benefit of a previously filed application under 35 U.S.C. 119(e), specific reference to the earlier filed application must be made in the instant application. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. This should appear as the first sentence(s) of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. \_\_\_\_" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the

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prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

3. The requirements for a priority claim under 35 U.S.C. 119(e) have not been met and until they are met the instant application is only entitled to the 8/17/01 filing date.
4. Note the priority claim was not made until 3/28/02, in a declaration, which is outside the period of four months from the filing date of 8/21/01 of the instant application or 16 months from the filing date of the prior application of 8/18/00.
5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-9, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Dougan et al. 6,884,639.

First it is noted that the patent claims priority on the basis of a PCT application which was in English and designated the U.S.A. giving the patent an effective filing date of at least 3/6/01. ( see copy of the international application WO 01/73824 being supplied and also note that the PCT application in turn makes a priority claim to an even earlier EPO document. For applicant's information it is noted that the EPO priority document was filed in English, however the date of the EPO document is not being relied on in the instant rejection only the PCT filing date is being relied on ).

Dougan et al. teaches a detachable semiconductor wafer pod 109 having an integral measurement device. Dougan discloses that the pod can be connected to a load port (figure 1), a wafer robot handling device 110 with translational movement ( see figure 1 motion arcs ), that wafer measurement can take place prior to wafer processing or after wafer processing in a chamber ( col. 6, line 60 to col. 7, line 18 ), that processing can be controlled based on the measurement ( claim 21 ). Dougan further teaches that the pod can conform to various SEMI standards such as FOUP ( col. 6, lines 55-56 ), use of kinematic coupling ( col. 7, lines 20-22), and interfacing by cable including supplying power to the pod as well as use of a computer ( col. 8, lines 1-10). See the abstract; figures; col. 1, lines 13-38; col. 2, lines 9-25; col. 3, line 17-col.

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4, line 65; col. 5, lines 13-20; col. 5, line 59 to col. 6, line 67; col. 7, line 1 to col. 8, line 10; and the claims.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougan et al. 6,884,639.

Dougan et al. teaches a detachable semiconductor wafer pod 109 having an integral measurement device. Dougan discloses that the pod can be connected to a load port (figure 1), a wafer robot handling device 110, that wafer measurement can take place prior to wafer processing or after wafer processing in a chamber ( col. 6, line 60 to col. 7, line 18 ), that processing can be controlled based on the measurement ( claim 21 ). Dougan further teaches that the pod can conform to various SEMI standards

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such as FOUP ( col. 6, lines 55-56 ) , use of kinematic coupling ( col. 7, lines 20-22), and interfacing by cable including supplying power to the pod as well as use of a computer ( col. 8, lines 1-10). See the abstract; figures; col. 1, lines 13-38; col. 2, lines 9-25; col. 3, line 17-col. 4, line 65; col. 5, lines 13-20; col. 5, line 59 to col. 6, line 67; col. 7, line 1 to col. 8, line 10; and the claims.

Dougan does teach the use of a computer but does not expressly state that the data is stored, but Dougan does teach logging data ( col. 2, lines 2-6 ).

Dougan also fails to expressly state that the measurement pod is removed from one tool and moved to a second tool and then a simple pod is then connected to the first tool. Dougan however teaches one of the main reasons for the measurement pod is the ease of adapting. Col. 4, lines 12-67.

It would have been obvious to one of ordinary skill in the art to modify Dougan and log the measurements in memory for later use and further detailed analysis.

Further it would have been obvious to one of ordinary skill in the art to modify Dougan and share a single measurement pod among multiple tools and eliminate redundant measurement tools. Further it would have been obvious to one of ordinary skill in the art that if the measurement pod is removed from one tool of Dougan and moved to another tool that the empty port must be sealed somehow and a plain pod would be readily available with no additional expense.

10. Claims 1,2, and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abraham et al. 6,420,864 in view of Rosengaus et al. 6,020,957.

Abraham et al. teaches an apparatus for manufacturing semiconductor devices and teaches use of standardized containers and/or measurement chambers; transfer of wafers; use of a computer, power source, or other device in close proximity to the measurement device or at a distance from the measurement device ( col. 6, lines 5-17).

Abraham teaches that the use of standardized containers and/or measurement chambers (pods ) allows ease in reconfiguring the system by allowing the containers and measurement chambers to be interchanged at a port (interface). ( see col. 1, lines 30-37; col.2 , lines 16-27; and claim 5 in regards to the interchange of standardized elements ) Abraham also teaches that the use of the standardized components allows ease in replacement of a defective module ( col. 2, lines 16-27 ) and also allows the whole system to remain within given physical size limits ( industry standard, col. 6, lines 25-31 ) Also see the abstract; figures; col. 1, lines 30-52; col. 2, lines 16-27; col. 3, lines 1-13; col. 4, lines 1-12; col. 6, lines 5-67; and the claims.

Abraham however does not specifically apply the system to a wafer fabrication tool, or teach moving wafers between the process chamber and the measurement chamber. Abraham also does not specifically show the connections of power, transfer of data from the pod to a computer. Abraham however does teach the use of a computer system, power supply , etc. can be mounted at some distance away from a pod if required and that it is well known ( col. 6, lines 5-17 ).

It would have been obvious to one of ordinary skill in the art to provide the required connections so that data could be transferred to a computer and power supplied to a pod in view of the express teaching of Abraham.

Rosengaus et al. 6,020,957 teaches a cluster tool having a central transport with wafer processing tools and an inspection system arranged around the transport. Rosengaus teaches that this allows one or more process tools to be monitored ( col. 16, lines 39-40 and col. 17, lines 15-23 ) and also teaches keeping a system at a constant vacuum and having a wafer visit a succession of tools ( col. 16, lines 26-31 ). See figure 11 and col. 18, line 17 to col. 17, line 40. Note that the successive movement between tools requires coordinated control and also that the inspection device and a processing tool can not operate on the same wafer at the same time and that they are inherently performing separate process operations on a wafer previously presented to the cluster tool.

It would have been obvious to one of ordinary skill in the art to modify Abraham in view of teachings of Rosengaus so that standardized pods could be used in a cluster tool with wafer processing tools and not just in a measurement system for increased sales, a wider market range, improved process control, ease in reconfiguration, and ease in repair.

Abraham . and Rosengaus however do not specifically disclose disconnecting an inspection pod from a first tool, connecting the inspection pod to a different tool and connecting a second pod to the first tool that does not perform an inspection function.

It would have been obvious to one of ordinary skill in the art to modify Abraham . and Rosengaus to disconnect a unique expensive inspection pod that performs an unique inspection from a first cluster tool, connect the inspection pod to a different

cluster tool and connect a second pod to the first tool that does not perform an inspection function. This would allow an expensive pod to be shared between cluster tools and at the same time allow continued processing of a larger group of wafers at the first tool.

In response to applicant's arguments, Abraham teaches a pod connected to a load port, if for no other reason than a substrate is loaded into the pod and then moved from the pod after measurement, while Rosengaus provides a fabrication tool environment and is relied on for the reasons given above. In regards to applicant's comments about Abraham col. 2, lines 11-15, this section of Abraham is mainly directed to the stocker system which acts as a buffer between the processing and measurement phases. Further Abraham states that such a stocker may reduce delay times not that it always reduces delay time as applicant appears to argue.

Further in regards to the applied combination, one of ordinary skill in the art recognizes that anytime that the internal environment of a tool whether it be a metrology tool or an actual fabrication tool that the clean environment must be maintained. As pointed out previously Abraham teaches exchanging different measurement tools.

11. Claims 3,4, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abraham et al. 6,420,864 in view of Rosengaus et al. 6,020,957 as applied to claims 1,2, and 5-11 above, and further in view of Martin 6,591,162.

Abraham et al. teaches an apparatus for manufacturing semiconductor devices and teaches use of standardized containers and/or measurement chambers; transfer

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of wafers; use of a computer, power source, or other device in close proximity to the measurement device or at a distance from the measurement device ( col. 6, lines 5-17).

Abraham teaches that the use of standardized containers and/or measurement chambers (pods ) allows ease in reconfiguring the system by allowing the containers and measurement chambers to be interchanged at a port (interface). ( see col. 1, lines 30-37; col.2 , lines 16-27; and claim 5 in regards to the interchange of standardized elements ) Abraham also teaches that the use of the standardized components allows ease in replacement of a defective module ( col. 2, lines 16-27 ) and allows the whole system to remain within given physical size limits ( industry standard, col. 6, lines 25-31). Also see the abstract; figures; col. 1, lines 30-52; col. 2, lines 16-27; col. 3, lines 1-13; col. 4, lines 1-12; col. 6, lines 5-67; and the claims.

Abraham however does not specifically apply the system to a wafer fabrication tool, or teach moving wafers between the process chamber and the measurement chamber. Abraham also does not specifically show the connections for power and transfer of data from the pod to a computer. Abraham however does teach the use of a computer system, power supply , etc. that can be mounted at some distance away from a pod if required and that it is well known ( col. 6, lines 5-17 ).

It would have been obvious to one of ordinary skill in the art to provide the required connections so that data could be transferred to a computer and power supplied to a pod in view of the express teaching of Abraham.

Rosengaus et al. 6,020,957 teaches a cluster tool having a central transport with wafer processing tools and an inspection system arranged around the transport.

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Rosengaus teaches that this allows one or more process tools to be monitored ( col. 16, lines 39-40 and col. 17, lines 15-23 ) and also teaches keeping a system at a constant vacuum and having a wafer visit a succession of tools ( col. 16, lines 26-31 ). See figure 11 and col. 18, line 17 to col. 17, line 40. Note that the successive movement between tools requires coordinated control and also that the inspection device and a processing tool can not operate on the same wafer at the same time and that they are inherently performing separate process operations on a wafer previously presented to the cluster tool.

It would have been obvious to one of ordinary skill in the art to modify Abraham in view of teachings of Rosengaus so that standardized pods could be used in a cluster tool having wafer processing tools and not just in a measurement system for increased sales, a wider market range, improved process control, ease in reconfiguration, and ease in repair.

Abraham . and Rosengaus however do not specifically disclose disconnecting an inspection pod from a first tool, connecting the inspection pod to a different tool and connecting a second pod to the first tool that does not perform an inspection function.

It would have been obvious to one of ordinary skill in the art to modify Abraham . and Rosengaus in view of the teachings of Abraham to disconnect a unique expensive inspection pod that performs an unique inspection from a first cluster tool, connect the inspection pod to a different cluster tool and connect a second pod to the first tool that does not perform an inspection function. This would allow an expensive inspection pod

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to be shared between cluster tools and at the same time allow continued processing of a larger group of wafers at the first tool.

Abraham and Rosengaus however do not teach the use of FOUP, FIMS, or kinematic mounts.

Martin teaches monitoring exchangeable FOUP pods for various conditions such as determining if the interface has sealed properly, etc. ; and also teaches the use of kinematic mounting; SMIF or other standards. See the abstract; figures; col. 1, line 21 to col. 3, line 20; col. 6, lines 29-63; col. 7, lines 9-23.

It would have been obvious to one of ordinary skill in the art to modify Abraham and Rosengaus in view of Martin to use FOUP type pods and use kinematic mounting in view of Martin. This would allow monitoring the interface to insure that the pod interface has sealed, allow ease in mounting the pods, and prevent contamination.

12. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessel et al. 2002/0118365.

Kessel et al. teaches a measurement pod ( wafer cassette) that can be connected to a load port of a fabrication device. Abstract; figures; paragraphs 0004-0009, 0014,0017,0019,0021,0022, and the claims.

Kessel while teachings the use does not expressly connect it to a fabrication device. Paragraph 0009

It would have been obvious to one of ordinary skill in the art to modify Kessel and connect the pod to a fabrication device so that it would be used as intended.

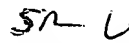
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13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Henry WO 98/59229 is of interest in a measurement pod.

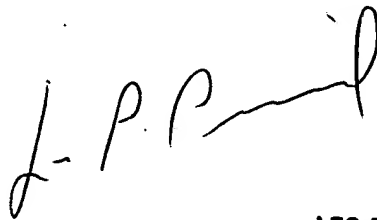
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven R. Garland whose telephone number is 571-272-3741. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Steven R Garland  
Examiner  
Art Unit 2125

08/25/05



LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100